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Helicoma jianfenglingense sp. nov. and *Cubasina* and *Endophragmiella* species new to China

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Abstract — A new species, *Helicoma jianfenglingense,* is described and illustrated from specimens collected on dead branches in Hainan Province. It differs in conidial morphology from the other known *Helicoma* species. Descriptions and illustrations are provided of two other asexual fungi, *Endophragmiella albiziae* and *Cubasina albofusca*, which are recorded for the first time from China.

Key words — hyphomycetes, taxonomy

Introduction

The genus *Helicoma* was introduced by Corda (1837), with the type species *H. muelleri* Corda. The early concept of *Helicoma* was often confused with *Helicomyces* and *Helicosporium* for their similar helical conidia. Linder (1929), who treated 26 *Helicoma* species, characterized the genus as having thick-walled, non-hygroscopic, coiled conidia that distinguished it from *Helicomyces* and *Helicosporium* and other allied genera with hygroscopic conidia. Zhao et al. (2007) dealt with *Helicoma* and accepted 45 species. Since then, three additional *Helicoma* species have been described (Boonmee et al. 2014). A fungus with the morphological characteristics of *Helicoma* is proposed here as a new species.

In addition, two other anamorphic fungi, *Endophragmiella albiziae* and *Cubasina albofusca,* have been collected that represent new records for China. About 75 species have been accepted in *Endophragmiella* (Kirk et al. 2008) while *Cubasina* contains two species (Castañeda-Ruíz 1986, Marques et al. 2007).

Specimens were collected on decaying twigs and dead stems in the tropical forests from China and are deposited in the Herbarium, Department of Plant Pathology, Shandong

Agricultural University, Taian, China (HSAUP) and the Mycological Herbarium, Institute of Microbiology, Chinese Academy of Sciences, Beijing, China (HMAS).

Helicoma jianfenglingense J.M. Gao & X.G. Zhang, sp. nov. Fig. 1

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Differs from most other *Helicoma* species by its semi-helicoid conidia.

Type: China. Hainan Province: Jianfengling National Forest Park, on dead stems of unidentified broadleaf tree, 20 Apr. 2015, J.M. Gao (**Holotype**, HSAUP H9713; **isotype**, HMAS 245603).

Etymology: in reference to the type locality.

Fig. 1. *Helicoma jianfenglingense* (holotype, HSAUP H9713). A. conidiophores, conidiogenous cells, and conidia. B. conidiophore and conidiogenous cell. C. conidia.

Colonies on natural substrate effuse, pale brown to brown, hairy. Mycelium partly superficial, partly immersed in the substratum, composed of septate, smooth, branched hyphae. Conidiophores simple or rarely branched, erect, straight or slightly flexuous, dark brown, slightly paler in the distal part, cylindrical, smooth-walled, septate, 70–150 × 3–4 µm. Conidiogenous cells mono- or polyblastic, integrated, terminal or rarely intercalary, determinate, cylindrical, denticulate, smooth, sporogenous denticles pale brown, inconspicuous, cylindrical, 1–2 × 0.5–1 µm. Conidia dry, solitary, acropleurogenous, hyaline, semi-helicoid, coiled ¼–½ times, 5.5–13.5 µm in diam; smooth, conidial filament 4–5 µm wide, indistinctly 2–12-septate, rounded at the apex, with a distinctly darkened conidial scar.

Comments—*Helicoma jianfenglingense* differs from previously described species of *Helicoma* in the number of conidial coils. The semi-helicoid conidia of *H. jianfenglingense* are less coiled than those of other *Helicoma* species (coiled ½–4½ times; Zhao 2007). *Helicoma indicum* also has semi-helicoid conidia, but they are smaller, uniseptate, and coiled ½–¾ times, and the conidiophores are fasciculate to synnematous (Gawas & Bhat 2007).

Endophragmiella albiziae (M.B. Ellis) S. Hughes, New Zealand J. Bot. 17:146 (1979)
Fig. 2
≡ *Domingoella albiziae* M.B. Ellis, Mycol. Pap. 131: 3 (1972)

Colonies effuse, pale brown to brown, hairy or velvety. Mycelium partly superficial, partly immersed in the substratum, composed of septate, smooth, pale brown to dark brown, 1–9 µm thick hyphae. Conidiophores arising singly, terminally and laterally on the hyphae, straight or flexuous, subulate or cylindrical, septate, brown to dark blackish brown, paler towards the apex, with 0–9 terminal proliferations, 200–500 × 5–9 µm, sometimes swollen at the base. Conidiogenous cells monoblastic, terminal, brown, cylindrical. Conidia solitary, dry, formed first at the apex and then terminally on each successive percurrent proliferation, spherical, pale brown to brown, aseptate, smooth, thick-walled, 16–20 µm diam. with a short cylindrical pedicel at the base.

Specimen examined: **CHINA. Yunnan Province**, tropical forest of Menglun, on dead stems of unidentified broadleaf tree, 19 Dec. 2014, J.M. Gao (HSAUP H9605).

Comments—The transfer of *Domingoella albiziae* to *Endophragmiella* by Hughes (1979) is currently accepted (Kirk 1985, Kirk et al. 2008, Seifert et al. 2011). The species is reported for the first time from China. The Chinese specimen closely matches the protologue description (Ellis 1972, as *D. albiziae*; Hughes 1979), except that the type specimen has slightly bigger conidia (16–22 µm diam).

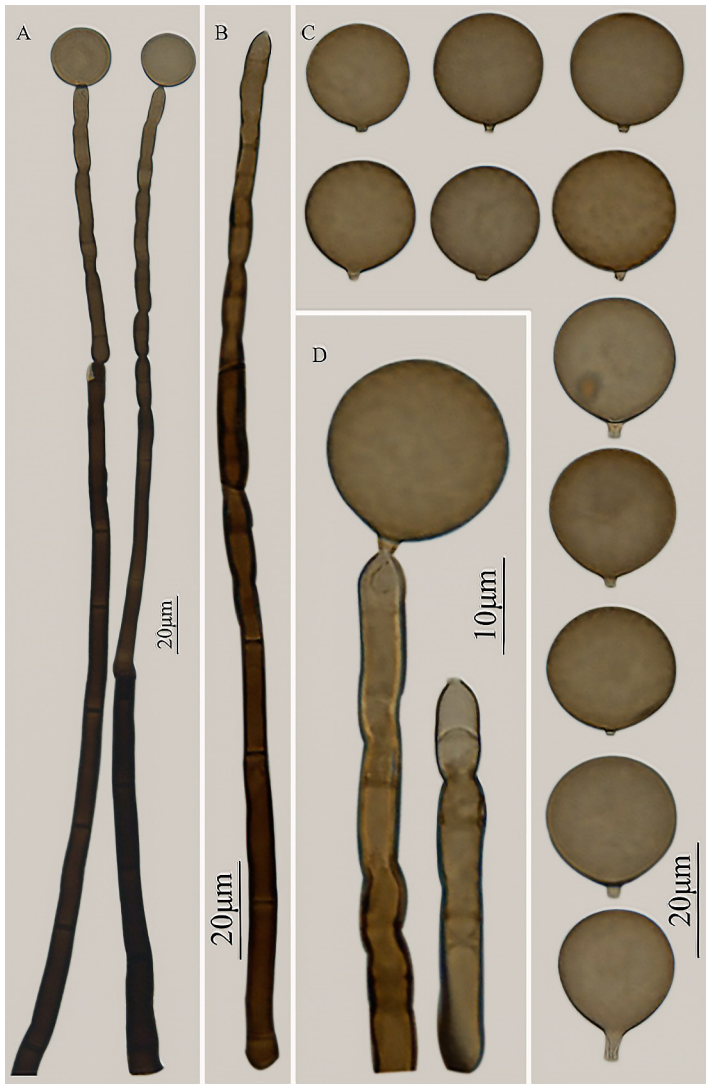

Fig. 2. *Endophragmiella albiziae* (HSAUP H9605). A, D. conidiophores, conidiogenous cells, and conidia. B. conidiophore and conidiogenous cells. C. conidia.

Cubasina albofusca R.F. Castañeda, Deuteromyc. Cuba, Hyphomyc 4: 6 (1986) Fig. 3

Colonies on natural substrate effuse, hairy. Mycelium partly superficial, partly immersed in the substratum, composed of septate, hyaline, smooth hyphae. Conidiophores mononematous, simple, distinct, erect, straight or

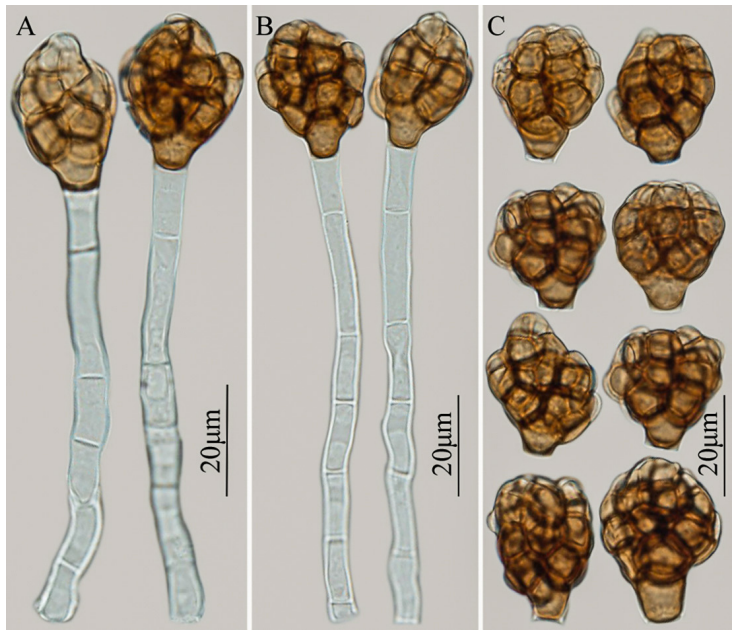

Fig. 3. *Cubasina albofusca* (HSAUP H9636). A, B. conidiophores, conidiogenous cells, and conidia. C. conidia.

slightly flexuous, geniculate, hyaline, unbranched, 30–120 × 3.5–7.0 µm. Conidiogenous cells monoblastic, integrated, terminal, cylindrical, hyaline. Conidia acrogenous, blastic, solitary, dictyoseptate, distinctly irregular, smooth, thick-walled, globose or subglobose, brown when mature, 20–30 × 15–25 µm.

Specimen examined: **CHINA. Yunnan Province**, tropical forest of Mengyang, on dead stems of unidentified broadleaf tree, 22 Dec. 2014, J.M. Gao (HSAUP H9636).

Comments—*Cubasina albofusca*, which was described from Cuba, is reported for the first time from China. The Chinese specimen closely matches the protologue description (Castañeda-Ruíz 1986), except that the type specimen has longer conidiophores (40–150 × 2–3.5 µm) and smaller acropleurogenous conidia (17–25 × 10–18 µm).

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